

Docket No. F-8488

Ser. No. 10/517,895

REMARKS

Claims 3 and 5-21 remain pending in this application. Claim 6 is objected to. Claims 3-21 are rejected. Claims 1 and 2 are previously cancelled. claim 6 is cancelled herein. Claims 3, 5, 6, 8-12, 15, 19 and 21 are amended herein to clarify the invention to address matters of form unrelated to substantive patentability issues.

INTERVIEW ACKNOWLEDGMENT

The applicant and applicant's attorney appreciate the Examiner's granting of the telephone interview conducted on December 5, 2007, and extend their thanks to the Examiner for his time and consideration. During the interview agreement was not reached because of the extensive claim amendments and the Examiner's time limitations for the interview. It was agreed that applicant would provide remarks explaining claim language. Such remarks are now provided herein.

DRAWING OBJECTIONS

The Examiner objects to the drawings under 37 C.F.R. § 1.83(a) for failing to show every feature of the invention specified in the claims. It is stated that the drawings do not show the features presented in claim 8 and claim 10. Applicant respectfully traverses this objection.

With regard to claim 8 the Examiner alleges that the drawings do not show "inner rings fitted in an outer periphery of the hub wheel and a nut mounted on one

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end side of the hub wheel in an axial direction for connecting the inner rings to the hub wheel.” It is believed that the Examiner’s concerns regard the plural inner rings recited in the claim. The claim is now amended to recite a singular inner ring fitted on an outer periphery of the hub wheel. The features of now independent claim 8 are clearly shown in Fig. 5 wherein the inner ring 32, nut 26, and hub wheel 22 are shown.

With regard to claim 10 the Examiner alleges that the drawings do not show “inner rings mounted outside the small-diameter outer periphery of the hub wheel and the rotor being formed by notches provided in a plurality of areas on an outer circumference of a large-diameter outer peripheral surface with a large diameter of the hub wheel.” Again, the recitation of “inner rings” is now amended to recite the broader terminology “inner ring.” In particular, claim 10 recites:

a hub wheel having first and second axial ends, said hub wheel having in sequential order from said first axial end a flange provided proximate said first axial end, an intermediate circumferential surface having a first diameter, a ring seat surface having a ring seat diameter less than said first diameter, and a threaded portion having an outer thread diameter less than said ring seat diameter; and
an inner ring mounted on said ring seat surface[.]

The claim is further amended to include the broader recitation of “at least one notch” instead of “notches”. Fig 8 clearly supports claim 10 as now amended. The inner ring 32 is seated on a ring seat of the hub wheel (the portion configured to

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receive the ring) between the nut 26 and the intermediate circumferential surface having notch 22c.

In view of the above explanation of amendments, reconsideration of the objection to the drawings and withdrawal thereof are earnestly solicited.

CLAIM OBJECTION

Claim 6 is objected to for allegedly awkward wording. Claim 6 is cancelled and now included in claim 5. The wording from claim 6 is amended to address the Examiner's concerns. Withdrawal of the objection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, ENABLEMENT REQUIREMENT

Claims 8, 10 and 11 are rejected under 35 U.S.C. § 112, first paragraph, as not being enabled by the specification. Applicant herein respectfully traverses this rejection.

With regard to claim 8 the Office Action states that "inner rings, a rolling element, a non-rolling element, a rotor and a stator is not shown in the embodiments. The Examiner attention is directed to Fig. 5, discussed above in relation to the drawing objection. Claim 8 is amended to recite "an inner ring" instead of "inner rings" as it appears this is the basis for the Examiner's concerns.

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Fig. 5 clearly shows an inner ring 32, a rolling element (hub wheel 22), a non-rolling element (ring 23 and cap 27), a stator 12 and a rotor (nut 26). Hence, Fig. 5 enables the claim

Claims 10 and 11 are similarly rejected. Both claims are amended to recite the broader term "an inner ring" instead of "inner rings." It is submitted that claims 10 and 11 are respectively supported and enabled by Figs. 8 and 9, and Fig. 10.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 3-21 are rejected as indefinite under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter of the invention as a result of informalities stated in the Office Action.

The Office Action questions the wording of a "rotor provided in said rolling element" and a "stator provided in said non-rolling element" presented in claims 3-5. Applicant has now amended the claims 3 and 5 to replace "in" with "as part of" or "on." The Examiner similarly questions the phrase "teeth provided in a surface" in claim 3. This phrase is now removed from claim 3.

The Examiner has also questioned "how the flat portion is formed on a circumference of the rolling element." The Examiner's concerns regarding this phraseology are not understood. An embodiment supporting this claim is shown in Fig. 1 wherein the rolling element is inner ring 2 and the rotor is clearly formed as a flat portion 2a on a surface of the inner ring 2 itself. Hence, the rotor is both

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in and on the inner ring as the ring itself comprises the rotor which is formed by the flat portion. Claim 3 is now amended to clearly recite "said rotor comprising a flat portion on a portion of a circumferential surface of said inner ring which opposes said plurality of polar teeth and is an outer peripheral shoulder of said inner ring." It is respectfully submitted that this language is sufficiently definite to meet statutory requirements.

"If upon review of a claim in its entirety, the examiner concludes that a rejection under 35 U.S.C. 112, second paragraph, is appropriate, such a rejection should be made and an analysis as to why the phrase(s) used in the claim is 'vague and indefinite' should be included in the Office action." MPEP §2173.02 (8cd. rev. 4 2005). At present, the instant Office Action fails to provide such analysis and applicant has responded as best as is feasible given the reasons put forth in the Office Action.

Claim 6 is questioned apparently for use of the term "peripheral surface." While the basis for the rejection is not understood from the Office Action, the term is now amended to read as "circumferential surface." Claim 6 is now cancelled and introduced into claim 5. Claim 5 recites "said second inner circumferential surface having a greater diameter than said inner ring outer circumferential surface end portion of another one of said inner rings." This is clearly readable upon the configuration shown in Fig. 4 wherein the rotor contacts one of the inner rings and not the other. Claim 5 includes inner rings "respectively having inner ring outer

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circumferential surface end portions adjacent one another in the axial direction.” Introduction is then made of “one of said inner rings” in the phrase “said rotor being fixed by fixedly fitting said first inner circumferential surface onto the inner ring outer circumferential surface end portion of one of said inner rings.” Subsequently, introduction is then made of “another one of said inner rings” in the phrase “said second inner circumferential surface having a greater diameter than said inner ring outer circumferential surface end portion of another one of said inner rings.” Thus proper introduction is made of both the “one” and the “another one” of the inner rings. Hence, it is submitted that the claim is clearly definite.

Claims 9-11 are also rejected as indefinite. These claims are now extensively revised and submitted as clearly definite. However, it is noted that the prior language did not appear indefinite. Should the Examiner further object to wording it is requested, as noted above, that explanation be given for the indefiniteness rejection.

The term “PCD” used in the claims is well known terminology in the art meaning “pitch circle diameter” and is related in the specification at page 13.

The Examiner’s grounds for rejection of claim 19 is not understood and further explanation is required if the claim is not deemed definite as presently amended. The claim is amended to remove double introduction of the rotor, stator, exciting and output windings. The claim is now believed to correspond precisely with the specification. The Examiner’s attention is directed to the specification text

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at line 31, page 5 to line 13, page 7.

In view of the above, it is submitted that the claims are amended to remove or correct the informalities noted in the Office Action. Therefore, reconsideration of the rejection of claims 3, and 5 -21 and their allowance are earnestly requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102(b)

Claims 12, 13, 17 and 21 are rejected under 35 U.S.C. § 102(b) as being anticipated by the Watanabe reference. Applicant herein respectfully traverses these rejections. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). It is respectfully submitted that the cited reference is deficient with regard to the following.

Claim 12 is now amended to recite "a rolling element in the form of an inner bearing ring" and a non-rolling element "in the form of an outer bearing ring." Additionally, "a generator for generating a voltage using energy provided by relative rotation of said rolling element relative to said non-rolling element and inputting the voltage as an input exciting voltage to said rotation detector, said generator having a first portion mounted to said inner bearing ring and a second portion mounted to said outer bearing ring" is included in the claim. It is respectfully submitted that Watanabe reference fails to teach such a generator so configured. The Examiner

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merely refers to signal source 45 in Fig. 3 as a teaching of a generator. However, there is no teaching that this signal source 45 is driven by energy provided by the relative rotation of an inner bearing ring and an outer bearing for which a rotation detector outputs an induced voltage relative to the rolling state of the inner and outer bearing rings.

With regard to claim 13, it is respectfully submitted that Examiner has misunderstood the claim. The generator of the claim is used to provide the exciting voltage which is then used to induce a voltage to measure rotation. What the Examiner refers to in the Watanabe reference are the coils and poles for measuring rotation. These are not used to provide an exciting voltage to an exciting winding. Such a signal is provided by the signal source 45. Hence, it is evident that the claim cannot be read on the Watanabe reference as proposed by the Examiner. Likewise, dependent claim 17 cannot be read on the Watanabe reference.

Claim 21 now recites the following:

said rolling element is an inner ring of a bearing and said non-rolling element is an outer ring of the bearing, and said rotor is formed of the inner ring and includes a flat portion of an outer circumferential surface of the inner ring.

In the Watanabe reference the bearings 17 and 18, inner rings 17a and 18a are clearly set apart from the magnetic poles of the rotor 16. Furthermore, there is no suggestion

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in the Watanabe reference that an inner ring of a bearing could be formed as a rotor, much less that the rotor would be formed by a flat portion on a surface of the inner ring.

In view of the above, it is respectfully submitted that claims 12, 13, 17 and 21 particularly describe and distinctly claim elements not disclosed in the cited reference. Therefore, reconsideration of the rejections of claims 12, 13, 17 and 21 and their allowance are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 3, 4, 16, 19 and 20 are rejected as obvious over the Watanabe reference in view of the Tajima reference under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

Claim 3 recites that "said rotor comprising a flat portion on a portion of a circumferential surface of said inner ring which opposes said plurality of polar teeth and is an outer peripheral shoulder of said inner ring." This is not taught by the references. In the Watanabe reference the rotor 16 is clearly not formed as a portion of a surface of the inner rings 17a and 18a of bearings 17 and 18. The Tajima reference is also deficient in this regard as the flat portions are not formed on a surface of an inner ring of a bearing.

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Claim 4 is cancelled and claims 16, 19 and 20 depend from claim 3. Thus, it is respectfully submitted that the rejected claims are not obvious in view of the cited reference(s) for the reasons stated above.

Claims 5 and 7 are rejected as obvious over the Watanabe reference in view of the Rigaux reference under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection.

Claim 5 is now amended to incorporate claim 6 and thus includes the following distinguishing subject matter:

said rotor being fixed by fixedly fitting said first inner circumferential surface onto the inner ring outer circumferential surface end portion of one of said inner rings; and

said second inner circumferential surface having a greater diameter than said inner ring outer circumferential surface end portion of another one of said inner rings and being disposed opposing said inner ring outer circumferential surface end portion of said another one of said inner rings and out of contact with said inner ring outer circumferential surface end portion of said another one of said inner rings such that said rotor does not contact said another one of said inner rings.

As noted above in regard to the §112, second paragraph rejection, this claimed material reads on the embodiment of the invention shown in Fig. 4 of the present application. In contrast, the rotor in the Rigaux embodiments seats on both inner rings. Thus, it is respectfully submitted that the rejected claims are not obvious in view of the cited references for the reasons stated above.

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Reconsideration of the rejections of all pending claims and their allowance are respectfully requested.

ALLOWABLE SUBJECT MATTER

Claims 8 and 15 are rejected as indefinite under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter of the invention. The Office Action cites various informalities in the claim language. The Office Action further indicates that claims 8 and 15 contain allowable subject matter and would be allowed if amended to overcome the §112, second paragraph rejection.

Claims 8 and 15 are amended to clarify the claimed invention and to place the claims into better conformance with U.S. claiming practice. The amendments were made with consideration of the various concerns of the Examiner noted in the Office Action. It is respectfully submitted that the amendments place the claims into condition for allowance. Therefore, and in light of the Office Action statement indicating that the claims contain allowable subject matter, reconsideration of the rejection of claims 8 and 15 and their allowance are earnestly requested.

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CLAIM FEES

There are presently five independent claims in excess of three. Payment was made for four claims in excess of three in the Amendment filed March 12, 2007. **The fee of \$210.00 for a further independent claim is provided for in the charge authorization presented in the PTO Form 2038, Credit Card Payment form, provided herewith.**

REQUEST FOR EXTENSION OF TIME

Applicant respectfully requests a three month extension of time for responding to the Office Action. **The fee of \$1050.00 for the extension is provided for in the charge authorization presented in the PTO Form 2038, Credit Card Payment form, provided herewith.**

If there is any discrepancy between the fee(s) due and the fee payment authorized in the Credit Card Payment Form PTO-2038 or the Form PTO-2038 is missing or fee payment via the Form PTO-2038 cannot be processed, the USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

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In light of the foregoing, the application is now believed to be in proper form
for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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